MEMORANDUM

TO: Docket Control

FROM: Ernest G. Johnson
Director
Utilities Division

DATE: February 3, 2006

RE: STAFF REPORT FOR PROPOSED AMENDMENTS TO THE ENVIRONMENTAL PORTFOLIO STANDARD RULES (DOCKET NO. RE-00000C-05-0030)

Attached is the Staff Report for Proposed Amendments to the Environmental Portfolio Standard Rules.

EGJ:RTW:lhm

Originator: Ray T. Williamson

STAFF REPORT
UTILITIES DIVISION
ARIZONA CORPORATION COMMISSION

PROPOSED AMENDMENTS
TO THE
ENVIRONMENTAL PORTFOLIO STANDARD RULES

DOCKET NO. RE-00000C-05-0030

FEBRUARY 2006

STAFF ACKNOWLEDGMENT

The Staff Report for proposed amendments to the Environmental Portfolio Standard Rules (Docket No. RE-00000C-05-0030) was the responsibility of the Staff members listed below. The Staff Report was the responsibility of Staff members Ray T. Williamson and Jamie R. Moe.

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EXECUTIVE SUMMARY
PROPOSED AMENDMENTS TO THE
ENVIRONMENTAL PORTFOLIO STANDARD RULES
DOCKET NO. RE-00000C-05-0030

The Environmental Portfolio Standard ('EPS") has a history dating back to the Resource Planning efforts of the 1980s and 1990s. It started as the Solar Portfolio Standard in 1996. The results of the first four years of the portfolio (2001-2004) have been mixed with some successes and some failures.

The need for a change in the Portfolio Standard has resulted from several factors. They include utility failure to meet the full portfolio requirements, concerns about adequacy of portfolio financing, reliability concerns, post 9/11 security concerns, the need for a diverse fuel supply, the environmental impacts of generation, and the need for economical energy choices.

The proposed changes to the EPS Rules include gradually increasing the portfolio percentage from 1 percent to 15 percent, increased portfolio funding, addition of new technologies, a Distributed Resource set-aside, and the inclusion of out-of-state resources.

Staff has a number of new recommendations for the rules. They are:

- Projects installed before December 31, 2005, should receive "grandfather" status for extra credit multipliers, but no projects installed after that date would be eligible for extra credit multipliers.

- If an Affected Utility fails to meet its annual portfolio requirement, Staff recommends that the Commission review the annual compliance report and then require the utility to submit an Alternate Compliance Plan, describing how the Affected Utility will correct the shortfall.

- If an Affected Utility is clearly not in compliance with the Portfolio Standard, penalties, as prescribed by law, should be considered by the Commission

- A Distributed Renewable Energy Resource set-aside should be established. One-half of the set-aside shall be for residential applications and one-half for non residential, non-utility owned applications. Up to 10 percent of the Distributed Renewable Energy Resource set-aside may be met by renewable distributed generation electricity from non-utility owned generators that sell electricity at wholesale to utilities subject to portfolio standards. This wholesale distributed generation component would be part of the non-residential portion of the set-aside.

- The remainder of the portfolio may be met in four possible ways:

    1. Additional distributed resource kWh (beyond the set-aside)

    2. Utility owned renewable generation

3. Any kWh or credits from systems installed under the original portfolio standard.

4. kWh from power purchase agreements resulting from RFPs or other public bidding.

- Commission Staff shall hire an Independent Program Coordinator for the Distributed Resource Set-Aside.

- Utilities will be required to hire an independent auditor to certify that its procedures for choosing Eligible Renewable Energy Resources are fair, unbiased, and have been appropriately applied.

- New proposed technologies include: commercial solar swimming pool heating; geothermal space heating and process heating systems; renewable combined heat and power systems; solar industrial process heating and cooling; upgrades to existing hydropower facilities; and generation from existing hydropower facilities that is used to firm or regulate another eligible, intermittent renewable resource.

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I. Introduction

The Portfolio Standard has its foundation in efforts by the Arizona Corporation Commission ("Commission"), dating back to the 1980s, to encourage Arizona utilities to diversify their portfolio of generation resources to include clean, non-polluting renewable energy technologies. From the early utility renewable Research and Development projects to targets included in the Resource Planning orders, there has been a consistent theme of learning about and employing new renewable technologies in Arizona's electricity generation mix.

The Portfolio Standard was first established in 1996, modified in 1998, and changed and expanded in 2001. Staff recommends that the Commission revoke the existing rules and adopt new rules that will amend and expand the Environmental Portfolio Standard.

II. History of the Environmental Portfolio Standard

A. Renewables in Resource Planning

In 1988, the Commission opened a docket to develop Resource Planning rules. The thrust of this resource planning effort was to require utilities to consider both the need for new electricity generation and the potential to meet the new load growth by considering the addition of new power plants or the modification of the load and load growth by looking at the "demand side" of the demand-supply equation.

As part of the resource planning effort, the Commission established in Decision No. 58643, dated June 1, 1994, a requirement for Arizona's four largest Commission-regulated utilities to provide specific amounts of renewable generation by December 31, 2000.

The goals were the installation of renewable capacity as follows:

Arizona Electric Power Cooperative	1,000 kW
Citizens Utilities Company	1,000 kW
Tucson Electric Power Company	5,000 kW
Arizona Public Service Company	12,000 kW

B. Renewables in the Retail Electric Competition Effort

In 1995, the Commission opened a Docket to consider the potential for retail electricity competition in Arizona. A number of Task Forces and Working Groups were formed to discuss the issues related to competition.

The recommendations from the task forces and working groups included a requirement to incorporate new renewable energy resource requirements in the Retail Electric Competition Rules.

C. 1996 Solar Portfolio Standard

The 1996 Solar Portfolio Standard was developed as part of the 1996 Retail Electric Competition Rules. The initial standard was a requirement that a percentage of retail electricity sold to Arizona customers must be from new solar resources. This percentage was ½ of one percent of retail electricity sales in 1999, 2000, and 2001. The percentage was to increase to one percent starting in 2002.

Included in the initial rules was a provision that any solar electricity produced from January 1, 1997, through January 1, 1999, would be credited for two times the electricity generated. This "early installation incentive" was designed to encourage early action and solar system installation by utilities and other electric service providers.

The rules included a penalty of $0.30 per kilowatt hour for deficiencies in meeting the portfolio requirements. The Solar Portfolio Standard rules were enacted as A.A.C. R14-2-1609.

D. The 1997 Solar Portfolio Standard Subcommittee

The Commission Staff organized a number of working groups as a follow up to the passage of the Retail Electric Competition Rules in 1996. One such working group was the Unbundled Services and Standard Offer Working Group. This Working Group established the Solar Portfolio Standard Subcommittee, which met from May 1997 through September 1997.

The Solar Portfolio Standard Subcommittee addressed the goals of the portfolio standard, the definition of eligible portfolio technologies, the costs and timing of the portfolio, incentives in the portfolio, and various other administrative and technical issues.

The subcommittee had four major issues of agreement:

- The penalty provision needed to be changed.
- New incentives were needed to encourage electric service providers to meet the portfolio standard.
- Electric service providers should be allowed to "bank" or save any extra (above the portfolio requirement) solar kWh produced in a year for use in later years. Also, extra solar kWh produced could be sold to other electric service providers to meet their portfolio requirements.
- The costs of the Solar Portfolio Standard should be limited to an acceptable cost/benefit point.

E. The 1998 Changes to the Portfolio Standard

In 1998, the Commission amended the Retail Electric Competition Rules, which included the Solar Portfolio Standard. The changes made to the Solar Portfolio Standard Rules reflected a number of recommendations from the work of the Solar Portfolio Standard Subcommittee. Those changes were:

- The portfolio percentage was to start at .2 percent of retail electricity sales, increasing .2 percent each year until it reached a 1 percent level in 2003.
- A series of "extra credit multipliers," were established. They included:
  - An Early Installation Extra Credit Multiplier.
  - Solar Economic Development Extra Credit Multipliers, which include incentives for in-state power plant installation and in-state manufacturing of renewable technologies.
  - A Distributed Solar Electric Generator and Solar Incentive Program Extra Credit Multiplier, which encourages renewable installations on customer premises, utility "Green Pricing" programs, Net Metering or Net Billing programs, and solar leasing programs.
  - A partial credit for the portfolio standard for an Electric Service Provider or affiliate that owns or makes an investment in a renewable manufacturing plant in Arizona.
  - A solar water heater rebate program was established.

F. The 1999 Change in Direction for the Portfolio Standard

The Commission, in January 1999, suspended the Retail Electric Competition Rules, including the Solar Portfolio Standard Rules. The Commission ordered a hearing to consider possible changes to the Solar Portfolio Standard Rules in Docket No. E-00000A-99-0205.

The Hearing Division of the Commission received sworn testimony and conducted hearings on the Portfolio Standard in August 1999.

Among the rule changes considered were the addition of new "environmentally friendly" technologies such as wind generators, landfill gas generators, and biomass generators. In addition, solar water heaters and solar air conditioning were suggested for inclusion in the Portfolio Standard.

After draft rule wording was developed, there was significant disagreement among stakeholders about the draft wording. A series of settlement meetings and negotiations were held in an attempt to resolve differences.

G. The 2001 Environmental Portfolio Standard Rules

The issues discussed in the 1999 hearings, the settlement negotiations, and other discussions of the stakeholders led to some major changes in the Portfolio Standard.

The name change from the Solar Portfolio Standard to the new Environmental Portfolio Standard reflected that the portfolio would rely on a number of renewable energy technologies rather than just on solar energy.

The second major change was the development of the Environmental Portfolio Standard Surcharge which, along with System Benefits Charges, would finance the Portfolio program.

The third major change was to require half of the Portfolio to come from solar electricity and the other half to come from other "environmentally-friendly renewable technologies," such as wind, biomass, landfill gas, solar water heating, and solar air-conditioning.

On February 8, 2001, the Commission entered Decision No. 63364, which adopted the Environmental Portfolio Standard Rules, A.A.C. R14-2-1618.

A number of requests for rehearing and reconsideration of Decision No. 63364 were filed at the Commission. On March 29, 2001, the Commission entered Decision No. 63486, which amended the Environmental Portfolio Standard Rules in response to the requests for rehearing and reconsideration. Included in Decision No. 63486 was a provision allowing non-profit, member-owned cooperatives a 180-day exemption from the rules and requiring exempt cooperatives to file a plan to meet their portfolio requirements.

H. The 2003 Environmental Portfolio Cost Evaluation Working Group Report

In A.A.C. R14-2-1618B.2, the Commission required that the "Director, Utilities Division shall establish, not later than January 1, 2003, an Environmental Portfolio Cost Evaluation Working Group to make recommendations to the Commission of an acceptable portfolio electricity cost/benefit point...."

The Director appointed 20 members to the Cost Evaluation Working Group ("CEWG"). The CEWG commenced meeting in September 2002, and the meetings continued through June 2003.

The final report of the CEWG was filed on June 30, 2003. It was entitled "Final Report: Costs, Benefits, and Impacts of the Arizona Environmental Portfolio Standard."

The recommendations of the final Report were:

Recommendations:

1. The CEWG recommends that the Commission use the Portfolio net simple cost premium number of $0.11 per kWh, defined in the Recommendations section of this report, as a reference point or benchmark for evaluating future costs and cost reductions resulting from the EPS. This net simple cost premium may be used by the Commission as a general benchmark to evaluate in the aggregate the future progress in achieving cost reductions in solar photovoltaic projects by the Load Serving Entity ("LSE") as a result of their efforts to comply with the goals of the EPS Rules. It should be noted, however, that this net simple cost premium is based on a set of assumptions and the current funding method of the projects. As noted in the Recommendations section, to the extent the assumptions change, the benchmark would have to be adjusted for items such as financing or operating costs.

2. The CEWG recommends that the Commission recognize that considerable progress has been made in just 18 months and that the EPS should be continued with two possible options:

- Option 1: Take no action at this time and leave the annual renewable energy target at 0.8 percent of retail energy sales for all LSEs until a future review determines that either EPS funding is sufficient, or solar generation costs have declined to the point for EPS program success for all LSEs at the 0.8 percent level, then increase the program to 1.1 percent.

- Option 2: Continue the renewable energy requirement increase to 1.1. percent by 2007.

On October 6, 2003, the Commission Staff and Environmental the CEWG conducted a Workshop & Special Open Meeting that described the group's recommendations.

On February 19, 2004, the Commission entered Decision No. 66798, which approved a cost-benefit point for the Environmental Portfolio Standard, as recommended by the Cost Evaluation Working Group Report. The Commission further ordered that the scheduled increase in the portfolio percentage should continue until reaching the specified maximum. Finally, the Commission ordered the Commission Staff to commence a series of workshops throughout Arizona to examine the appropriate resource mix, surcharge levels, portfolio percentages and phase-in levels for the Environmental Portfolio Standard.

I. The 2004-2006 EPS Rule Amendment Process

On January 6, 2004, the Commission directed the Commission Staff to commence a process to consider a limited number of possible changes to the Environmental Portfolio Standard Rules. Comments on possible changes were requested in February 2004, and over 45 organizations or individuals provided the Commission with written comments.

The Commission Staff conducted a total of four workshops in March and April 2004 to allow discussion of proposed changes to the rules. Two workshops were held in Phoenix, with one each held in Tucson and Flagstaff. A final workshop was held in June 2004 in Phoenix.

On January 21, 2005, Staff filed the "Staff Report on Proposed Changes to the Environmental Portfolio Standard Rules (Docket Nos. RE-00000C-00-0377 and RE-00000C-05-0030)." Included in the Staff Report was a discussion of the major issues, a synopsis of a number of major comprehensive proposals, and a series of Staff recommendations of specific rule amendments.

Parties were asked to file written comments on the Staff Report and file the comments in Docket Control by February 17, 2005.

On April 22, 2005, Staff filed draft proposed rule amendments. Parties were asked to file comments by May 3, 2005.

On June 2 and 3, 2005, the Commission held a Special Open Meeting with Public Comment and Commissioner deliberations concerning the proposed rule amendments.

On August 10 and 11, 2005, the Commission held a Special Open Meeting for the Commissioners to discuss 15 specific issues related to the Environmental Portfolio Standard. The Commissioners voted on each issue in order to give Staff guidance on how to craft changes to the rule wording.

III. Synopsis of the Results of the Environmental Portfolio Standard

The results of the Portfolio Standard have been mixed.

In 2001, the first year of the Environmental Portfolio Standard, Arizona Public Service Company ("APS") met over 99 percent of its portfolio requirement. This was due primarily to three different approaches. First, APS began installing photovoltaic ("PV") systems in 1997 as a result of incentives included in the original Solar Portfolio Standard. By starting early, APS gained valuable field experience and early installation extra credit multipliers. APS banked or saved those kWh for use in 2001. Second, APS was able to purchase enough landfill gas credits to meet half of its portfolio. Third, APS purchased solar hot water credits from a solar water heater in a federal prison.

Also in 2001, Tucson Electric Power Company ("TEP") met half of its portfolio requirement from its own landfill gas generator and the remainder from photovoltaic systems installed in its Springerville coal plant. This met 72 percent of the TEP requirement. Both Citizens Electric and Navopache Electric Cooperative met half of their portfolio requirements by purchasing landfill gas credits.

In 2002, both APS and TEP met a major portion of the non-solar requirement with landfill gas credits. They also met a portion of the solar electricity requirement from utility-owned photovoltaic systems. Both Citizens Electric and Navopache Electric Cooperative met half of their portfolio requirement with purchased landfill gas credits.

By 2003, large quantities of landfill gas credits were not readily available for purchase to meet portfolio requirements. Because of the credit shortage, APS met only 14 percent of its portfolio, mostly from solar electric and solar water heating credits. TEP, having its own landfill gas plant, met 78 percent of its requirement. Both Citizens Electric and Navopache Electric Cooperative again met half of their requirements from landfill gas credits. Navopache also started using credits from new photovoltaic systems.

By 2004, APS benefited from a new biomass plant, as well as customer-sited system credits. APS met 16 percent of its annual requirement. For TEP, its landfill gas plant met half of the annual requirement with a substantial input from the Springerville Solar Generating Station. TEP met 73 percent of its annual requirement. UNS Electric (formerly Citizens Electric) met 40 percent of its requirement, mostly from landfill gas credits. Navopache Electric Cooperative met 60 percent of its requirement, mostly from landfill gas credits, but with a good output from its newly installed photovoltaic systems.

IV. Need for Change in the Portfolio Standard

Since the Environmental Portfolio Standard was approved in 2001, a number of significant changes have occurred which will require a modification of the Portfolio Standard. These include:

- A significant change in the 1996 El Paso Natural Gas Settlement, which greatly reduces Arizona's share of capacity in the El Paso natural gas line which serves Arizona gas customers and many of the new power plants that provide Arizona electricity.

- A decline in the production of the major natural gas fields from which Arizona draws most of its natural gas.

- A significant increase in the cost of natural gas to Arizona gas customers and Arizona gas-fuel power plants.

- A significant reduction in production of natural gas in the Gulf of Mexico due to Hurricanes Katrina, Rita and others.

- A continuation of explosive growth in Arizona and the resulting increased electricity demand.

- The continued reliance of Arizona utilities on large, central station generators, located far from customer loads, and dependent upon vulnerable Extra High Voltage (EHV) transmission lines to maintain reliable service to Arizona's citizens and economy.

- A fire at the West Wing Substation that highlighted the vulnerability of the Arizona electrical system to accidents or sabotage at a few key facilities.

A. Utility Failure to Reach Portfolio Targets

As described in the Results Section of this Staff Report, utilities in Arizona have failed to meet the portfolio goals which were identified in the 1996 rules and revised in the 2001 amendment of the rules.

The Commission's goal to encourage energy diversity in utility generation portfolios has not been successful. Although the goal for energy diversity was extremely modest by all standards, even that modest goal has not been met.

The Commission's requirement was for utilities to slowly ramp up to one percent of retail electricity sales from renewable energy technologies by 2005. The results indicate that, with a few exceptions, most utilities have only been able to consistently meet around half of their annual portfolio requirements.

B. Concerns about Adequacy of Funding

Since the approval of the Environmental Portfolio Standard Rules, numerous utilities and other parties have expressed concern that the funding resulting from the Environmental Portfolio Standard Surcharges and the System Benefits Charges is not sufficient for the utilities to meet the existing Portfolio Standard requirements.

Some have argued that the funding level is simply too low to meet the portfolio requirements. Others might argue that the failure to meet the portfolio has more to do with utility choices of technologies rather than due to the level of funding available.

C. Reliability Concerns

Since 1996, when two major summer power outages blacked out the western U.S., the reliability of the Arizona grid and the interconnected western grid have been an important concern of the Commission. The August 2003 outage in the northeast U.S. caused further concern about reliability of the electrical systems throughout the U.S.

Reliability is affected by a number of aspects of the electrical system. These include the major transmission lines, the large central station power plants, and the availability of the fuel for the power plants.

Over the past 14 years, Arizona has added over 10,000 MW of new electric generators. The vast majority of these plants use natural gas as their fuel. Most of the new natural gas power plants rely on one major natural gas pipeline, the El Paso Natural Gas line, to supply their gas. As Arizona's reliance on new natural gas plants has increased, the potential for a major electrical shortfall has increased, particularly if there is a disruption in this single El Paso natural gas pipeline. The limited capacity in the El Paso pipeline makes it likely that there may not be enough gas in the future to meet both the power plants' and other customers' needs for California and Arizona.

Staff believes that diversification of power plant energy resources is critical in maintaining a reliable electric system in Arizona. While reliance on only a few types of fuels can be dangerous, utilities that broaden their fuel portfolios to a wide variety of fuels will have less severe impacts on their systems if one type of fuel is temporarily or permanently not available. An expansion of the existing Environmental Portfolio Standard to 15 percent of retail sales would lessen the vulnerability of Arizona's generation portfolio to unanticipated disruptions. If the new renewables replace the use of the more vulnerable fuels, such as natural gas, this broadening of the portfolio will act as "insurance" against possible future disruptions.

D. Post 9/11 Security Concerns

The security of energy delivery systems can be impacted in at least three different ways: first, by faults and failures of the delivery system; second, by natural disasters such as fires, floods, or earthquakes; and third, by intentional attacks from fringe groups or dedicated terrorist cells. The U.S. energy infrastructure in the west is vulnerable to well-planned, coordinated attacks that could well obliterate electricity, natural gas and petroleum service for single or multiple regions in the west. Future infrastructure additions must be planned to reduce or eliminate the potential for catastrophic results from either terrorist attack, natural disasters, or system failures.

E. Diversity of Fuel Supply and Technologies

Utilities that rely on a single or a few fuels for electricity generation are more vulnerable to shortages of fuel and the fluctuation of fuel prices than utilities that utilize a balanced and broadly diversified portfolio of fuel resources and generation technologies. Arizona's utilities should broaden their portfolio of generators in order to reduce these risks.

The severe price spikes for natural gas in 2005, which resulted from Hurricane Katrina and other hurricanes striking the Gulf Coast of the U.S., are prime examples of the price and availability impacts on utilities that do not have a diverse supply of fuels. These impacts can

place a severe strain on a utility's financial condition and put upward pressure on electricity rates. Even utilities with a balanced portfolio will experience these financial strains.

F. Environmental Impacts

An important consideration in the selection of generation fuels and technologies is the resulting environmental impacts of those choices. Fuels and technologies that limit the impacts on air quality and minimize waste residues from the generation of electricity should be given emphasis over more polluting fuels and technologies. Generators in major metropolitan areas or inside load pockets should be the most environmentally benign.

G. Economical Energy Choices/Positive Impact on the Economy

To the extent possible, utilities should strive to utilize the most economical energy resources and technologies. However, the determination of "most economical" should consider the full life cycle costs of the generation choices, including the risk management costs for fuel price hedging, and full costs of plant decommissioning and waste disposal.

In the 1990's when the cost of natural gas was $2.00 per million BTU, few believed that renewables could ever compete with natural gas turbines or combined cycle power plants. Today, in a post-Hurricane Katrina era where natural gas futures have run as high as $10-$15 per million BTU, renewables look very competitive.

One way to move to an economical energy portfolio mix is to increase the use of renewables and decrease the current over-reliance on natural gas generation.

V. New Directions for the Portfolio Standard

A. Increased Portfolio Percentage

When the original Solar Portfolio Standard was established in 1996, the very modest goal of one percent of retail electricity sales from renewable resources seemed like an appropriate first step. Since 1996, however, the average annual growth in retail electricity sales has been from three to four percent in Arizona.

If the growth in retail electricity sales continues at the level seen in the past few years, the growth in retail electricity sales over the next 20 years (from 2005-2025) will be approximately 80-119 percent.

Staff believes that a reasonable approach to expanding the use of renewable energy in Arizona will be to provide at least 25-33 percent of the new load growth over the next 20 years from clean, renewable resources. A target of 15 percent of retail electricity sales from renewables would easily integrate the renewable technologies into the utilities' portfolios of generation resources. In addition to the new renewable technologies, utilities would meet from

66-75 percent of the new load growth with a mixture of other cost-efficient conventional technologies.

B. Increased Funding

One reason that many renewable technologies are thought to be more expensive than conventional fossil fuel technologies has to do with the ratio of capital costs to fuel costs. Most renewable technologies are more expensive to build, on a dollar per kW basis, than, for instance, a conventional gas turbine generator. However, once the equipment is installed, many renewable energy systems will operate with free solar, wind, geothermal, and low-cost landfill gas energy resources.

This higher initial capital cost will provide "no-fuel-cost electricity" for the rest of the project life. Seen in this light, the higher initial capital cost of renewables can be viewed as an investment in a stable future price for renewable electricity, avoiding fuel price fluctuation risks and fuel availability risks.

Since the portfolio funding for 2001-2005 has been insufficient to meet the existing portfolio requirements, Staff recommends that the Commission increase the funding to a level sufficient to meet the requirements of the proposed rules.

C. Addition of New Eligible Technologies

The initial Solar Portfolio Standard was designed to take advantage of Arizona's most abundant renewable energy resource: the sun. As the portfolio standard has changed and expanded over the years, the need to incorporate a wide variety of renewable energy technologies has become recognized.

The focus of the Portfolio Standard has fundamentally shifted from its original intent, which was to generate a portion of Arizona's electricity from renewable energy resources. Now, the Portfolio Standard recognizes the need to replace the use of electricity or natural gas energy with renewable energy. So, the portfolio will allow the use of solar water heaters, solar air conditioners and solar space heaters, as well as solar daylighting devices that replace conventional energy with renewable energy.

D. Distributed Resources ("DR") Set-aside

In the initial Environmental Portfolio Standard, a number of extra credit multipliers were included as incentives to encourage distributed generation resources as part of the portfolio standard. It was assumed that utilities would take advantage of the extra credit multipliers and encourage the installation of a wide variety of renewable systems within the utility distribution systems.

Unfortunately, few utilities took advantage of the distributed generation incentives. Staff believes that the Portfolio Standard should encourage the widespread use of renewable energy systems throughout utility distribution systems. By encouraging the installation of distributed resources at customer premises, the production of electricity will be moved closer to the point of use.

By moving the production of electricity closer to the customer location, we can reduce the need to build new transmission to support the new generation. By reducing the hundreds of miles of transmission lines that have historically been needed to deliver electricity, there will be a resulting reduction in risk of losing that transmission to natural disaster or other unanticipated events. By having the generation closer to the customer, there will be reduced line losses. Therefore, more of the electricity generated will get to the end customer.

E. Out-of-State Resources

Arizona has abundant solar energy, but is somewhat limited in availability of other major renewable energy resources. In order to expand the Portfolio Standard to address a major portion of Arizona's electricity load, Arizona utilities will need to have access to low-cost renewable energy resources both from inside as well as from outside of Arizona.

The choice to move to include significant out-of-state resources is a double-edge sword. On the one hand, significant wind, geothermal, and biomass resources are available for Arizona to purchase. However, the over-reliance on out-of-state resources could counter the Arizona attempt to move toward more distributed generation resources.

Typically, the out-of-state resources will be large central station generators needing EHV transmission. Staff believes that this will move Arizona in the wrong direction, replacing large, central station in-state plants with large central station plants outside of Arizona that are dependent on hundreds of miles of vulnerable transmission lines to deliver power to Arizona's customers.

VI. Proposed Changes to the Environmental Portfolio Standard Rules

A. Portfolio Percentage

In its January 2005 Staff Report, Staff recommended a gradual increase in the Portfolio Standard. The increase, at first, would be one-quarter of one percent each year, increasing to a one-half percent increase, and eventually increasing to a one percent per year annual increase until a portfolio of 15 percent is achieved in 2025. Staff continues to recommend this schedule of increase over the next 20 years.

B. Portfolio Funding

In its January 2005 Staff Report, Staff recommended an increase in the surcharge caps for the Environmental Portfolio Standard. After reviewing comments on Staff's proposed increase in the surcharge and after evaluating the costs of an expanded portfolio compared to increased surcharge revenues, Staff recommended, in its April 2005 Draft Environmental Portfolio Standard rules, an additional increase in the underlying EPS surcharge number.

Staff and the Commissioners received extensive comments from customers concerning the proposed increase in both the caps and the surcharge. One major area of concern related to the impact on the smaller commercial and institution customers. In particular, customers that had multiple accounts and multiple locations anticipated a substantial financial impact on their aggregated utility bills. These customers included school districts, cities, and organizations with multiple locations.

Staff has studied the impacts associated with different levels of funding and has developed a sample tariff, which is attached to the rules as Appendix A and which includes proposed rates for various classes of customers. The Sample Tariff proposes to increase the surcharge caps to three times the existing surcharge caps and to increase the surcharge amount to 5.7 times the existing surcharge. Staff's analysis indicates that the level of funding likely to be produced by the sample Tariff would be sufficient to enable the Affected Utilities to meet the requirements of the rules in the early years, roughly 2006-2009. Based upon projections from APS and TEP, Staff estimates that this initial surcharge increase will provide $40-42 million in surcharge funds annually. (The exact funding amount will depend upon the resolution of the "proportionality requirement" included in the APS settlement.) The addition of $6 million in APS base-rate funds would make the annual portfolio funding between $46-48 million, increasing slightly each year to reflect new customers and load growth.

Because the Annual Renewable Energy Requirement increases gradually over a multi-year period, Staff recommends that a gradual approach be utilized to increase the surcharge funding collected. Staff recognizes that each Affected Utility may face unique circumstances, that some Affected Utilities have adjustor mechanisms for recovering costs related to renewable energy requirements, and that the increases in the Annual Renewable Energy Requirement occur over a gradual, multi-year period. All of these factors support the approach set forth in Proposed Rule 1808, which requires Affected Utilities to apply for an appropriate tariff within sixty days of the adoption of the rules. This approach will allow the Commission to consider both the analyses underlying the sample tariff and each Affected Utility's individual circumstances when adopting rates. Although the initial increase described in the sample tariff will be sufficient to meet the increases in the Annual Renewable Energy Requirement in the first two to three years, including variations among Affected Utilities are possible. Furthermore, even in the Sample Tariff's funding level is initially sufficient, it is unlikely to be sufficient indefinitely. Proposed Rules 1808 and 1813 therefore provide a means by which the Affected Utilities can apply to the Commission for an increase in the surcharge levels as future costs are calculated. An alternative approach for increasing surcharge funding could be through a utility adjustor mechanism, if the

subject utility has such a mechanism approved by the Commission. Proposed Rule 1808 recognizes this concept as well.

Staff recommends that each Affected Utility be required to file an annual implementation plan that will include a review of its Tariff. The filing would describe the effectiveness of the existing surcharge and caps in providing sufficient funding to meet the requirements of the rules. The Affected Utility would request to either leave the surcharge and caps as currently set or to make an appropriate change in the surcharge or caps.

C. Out-of-State Resources

Arizona has abundant solar energy resources, but has a limited supply of other renewable resources, such as wind, geothermal, biomass, and landfill gas resources. Therefore, allowing out-of-state resources to count toward the portfolio standard would be a cost-effective way to meet Arizona's portfolio requirement. However, to meet the intent of the Portfolio Standard, the out-of-state renewables must be delivered to Arizona customers, not merely displaced by conventional generators that do not meet Portfolio Standards. Staff has drafted rule wording to ensure that the utilities wishing to meet their portfolio requirements from out-of-state renewables must document the delivery of the renewable electricity by providing proof that the necessary transmission rights have been reserved and utilized and that the appropriate Control Area Operators have scheduled the renewable electricity for delivery to Arizona customers.

Relying on out-of-state resources, which must utilize transmission to deliver electricity to Arizona, increases the potential for reliability problems. In addition, the use of out-of-state resources may monopolize the use of limited transmission capacity, thereby blocking the access of other in-state renewable resources to the Arizona electrical system.

D. Extra Credit Multipliers

The Commission has determined that the extra credit multipliers that were included in the original Environmental Portfolio Standard should be removed from the new amended rules. Most of the multipliers were valid for the life of the renewable installations.

Staff recommends that any renewable project, which relied on extra credit multipliers that were in place as part of the Environmental Portfolio Standard Rules, should be "grandfathered" to allow continued use of the extra credit multipliers in the future. Any such project must be installed and operational by December 31, 2005, in order to be eligible for this "grandfather" status. No projects installed after December 31, 2005, would be eligible for extra credit multipliers.

E. Pre-approval of Renewable Power Purchase Agreements

In the early years of the Environmental Portfolio Standard (2001-2005), utilities were reluctant to sign long-term contracts for above-market cost renewable electricity. This was due

to fears that a future Commission might cancel the Portfolio Standard or block the utility from cost recovery of the above-market costs.

Staff recommends that the Commission allow utilities to file for pre-approval of renewable power purchase agreements.

F. Uniform Credit Purchase Program

Staff will establish a Uniform Credit Purchase Program Working Group to develop recommendations to the Commission for a uniform credit purchase program that utilities will utilize to meet a portion of their portfolio requirements.

G. Customer Self-Directed Programs

A Customer Self-Directed Program will be established to encourage installation of renewable energy systems at customer premises.

H. Penalties

If an Affected Utility fails to meet its annual portfolio requirement, Staff recommends that the Commission review the annual compliance report and then require the utility to submit an Alternate Compliance Plan, describing how the Affected Utility will correct the shortfall. Included would be a calculation of the cost of this compliance plan. The costs of the alternate compliance plan should not be recoverable in rates.

I. Net Metering Standards and Interconnection Standards

The Commission has directed that the Commission Staff develop net metering tariffs. The tariffs will be consistent with uniform net metering guidelines developed by the Commission with stakeholder input through the Distributed Generation Working Group.

J. Distributed Renewable Energy Resource Set-Aside

The draft rules include a gradual increase to 30 percent for the set-aside for Distributed Renewable Energy Resources. One-half of the set-aside shall be for residential applications and one-half for non-residential, non-utility owned applications.

In developing draft rule wording for the Distributed Renewable Energy Resource set-aside, Staff realized that one important potential category of distributed resources had been neglected. Staff recommends that up to 10 percent of the Distributed Renewable Energy Resource set-aside may be met by renewable distributed generation electricity from non-utility owned generators that sell electricity at wholesale to utilities subject to portfolio standards. This wholesale distributed generation component would be part of the non-residential portion of the set-aside.

K. Remainder of the Portfolio

Staff recommends that the remainder of the portfolio may be met in four possible ways: first, any distributed resource renewable kWh that go beyond the Distributed Renewable Energy Resource set-aside minimum shall be counted toward meeting the remainder of the portfolio requirement; second, utility-owned, renewable generation.

Third, utilities may utilize any renewable kWh or credits from systems installed under the original environmental portfolio standard or any contracts signed under the original portfolio standard.

Fourth, the remainder of the portfolio kWh must come from power purchase agreements resulting from RFPs or other public bidding procedures.

L. Independent Program Coordinator

The proposed rules contain provisions that are intended to ensure the fairness of the resource selection process.

First, the Affected Utilities are required to file annual reports that describe their procedures for choosing Eligible Renewable Energy Resources. These reports must also include a certification from an independent auditor that those procedures are fair and unbiased and have been appropriately applied.

Second, the proposed rules provide for a Program Coordinator to coordinate the Distributed Renewable Energy Resource Set-Aside. Affected Utilities will have a choice of whether or not they plan to utilize the Program Coordinator to meet the Distributed Renewable Energy Resource Set-Aside. If the Affected Utility chooses to proceed without the Program Coordinator, the utility would be subject to penalties if it fails to meet its Distributed Renewable Energy Requirement. On the other hand, if an Affected Utility chooses to utilize the Program Coordinator, the utility would be required to allocate a percentage of its annual portfoli0o funding to the Distributed Renewable Energy Resource Set-Aside which is equal to 15 percent of the total funds in 2006-2008; 20 percent in 2009; 25 percent in 2010 and 30 percent in 2011 and every year thereafter. If the utility chooses to sue the Program Coordinator, it will not be held responsible for meeting the Distributed Resources Set-Aside kWh requirement, and will only be responsible for providing the required funding level.

M. Addition of New Eligible Technologies

A number of new proposed technologies were mentioned in the January 2005 Staff Report and included in the first draft of the portfolio amendments in April 2005. Staff recommends that a number of additional technologies be considered for inclusion in the Environmental Portfolio Standard. They are:

1. Commercial Solar Swimming Pool Heating.

One appropriate renewable technology that was inadvertently left off the list of proposed additions to the Environmental Portfolio Standard was commercial solar swimming pool heaters. Most commercial swimming pools are heated and many operate year-round. The replacement of natural gas pool heaters with solar pool heaters would be very beneficial to municipalities, hotels, resorts, spas and other commercial pool owners. Staff recommends adding commercial solar swimming pool heaters to the list of eligible technologies.

2. Upgrades to Existing Hydropower Facilities.

The original Arizona Portfolio Standard set a clear benchmark: only new renewable resources built or installed after January 1, 1997, would be eligible to meet Portfolio requirements. This was intended to encourage new renewable installations. Therefore, the thousands of megaWatts of Arizona hydropower that existed prior to 1997 were not seen as an eligible resource.

However, new improvements in hydropower equipment, controls, and generating equipment can produce new hydro generating capacity at existing dams. Such improvements could include improved or modified turbine designs, improved generator windings, improved electrical excitation systems, and improved system controls. Staff recommends that the new hydropower capacity from such improvements be approved to be eligible to meet portfolio requirements.

3. Generation from hydropower facilities that is used to firm or regulate the output of other eligible intermittent resources.

One problem with some renewables, such as solar and wind, is their intermittent operation. They only provide power when the sun shines or the wind blows. This means that utilities need some back-up generation to ensure that the load is met on cloudy or still days. Usually, the back-up generator will use gas or coal.

However, if intermittent renewable resources use existing hydropower to "firm up" or regulate the output of the renewables, there is true replacement of polluting fossil fuels with clean, non-polluting renewables. Staff recommends that the output of hydropower generators that existed prior to 1997 be eligible for the Portfolio Standard to the extent that the electricity is used to firm or regulate another eligible, intermittent renewable resource.

4. Geothermal Space Heating and Process Heating Systems.

Geothermal heat coming from under the earth's surface can displace the need for the use of conventional energy resources in a wide variety of applications, including heating of buildings, heating greenhouses, and heating for fish farms.

5. Renewable Combined Heat and Power Systems.

Renewable Combined Heat and Power Systems are systems which include a distributed generator, which is fueled by an Eligible Renewable Energy Resource as defined in the Portfolio Standard Rules, that produces renewable electricity as well as renewable process heat for commercial, municipal or industrial applications.

6. Solar Industrial Process Heating and Cooling Systems.

Solar energy can do much more than merely heat buildings and water. Solar Industrial Process Heating and Cooling Systems can provide energy for a wide variety of commercial and industrial applications that require either heating or cooling.

In addition, the proposed rules contain a means by which the Commission may adopt pilot programs in which additional technologies may qualify as Eligible Renewable Energy Resources. This provision will allow the Commission to respond to new technological developments.

N. Ownership of Renewable Energy Certificates

The ownership of Renewable Energy Credits shall reside, initially, with the owner of the energy system that produces the kWh. Any sales contract of kWh by that system owner shall explicitly describe the transfer of rights to both the electricity and its renewable attributes.

O. Retirement of Renewable Energy Credits

One of the foundations of Arizona's Environmental Portfolio Standard is based upon the premise that using clean, renewable energy resources provides environmental benefits to Arizona. The use of renewable energy resources to meet the requirements of the portfolio standard may entitle the owner of the renewable energy resources to environmental pollution reduction credits. These environmental pollution reduction credits may have a value for sale or trade in a national or international market.

Staff believes that when a Renewable Energy Credit is used to meet the Annual Renewable Energy Requirement, the entire bundled Renewable Energy Credit should be retired, including the electricity, the renewable attributes, and the rights to any environmental pollution

reduction credits. Although there might be a temptation by the Affected Utility to sell any environmental pollution reduction credits on the open market, Staff recommends against such an approach.

Selling environmental pollution reduction credits merely provides a "ticket to pollute" to the purchaser of the credit. Instead of reducing pollution at its plant, the purchaser of the environmental credit may continue to pollute, up to the limit of the credits purchased. This could have the unintended consequence of worsening the pollution level, rather than improving it.

Results of the Environmental Portfolio Standard (2001-2004)

A. Arizona's Environmental Portfolio Standard Results - 2001

Arizona Public Service

In 2001, APS achieved nearly 100 percent of the EPS goal of 0.2 percent renewable energy from systems installed since 1997 when all extra credits are included. This was primarily due to extra credits that the utility had achieved for early, in-state solar installations for the solar component of the EPS mandate and the purchase of EPS credits from another utility for the non-solar component.

Tucson Electric Power

In 2001, TEP achieved 72 percent of the EPS goal of 0.2 percent renewable energy. This reflects meeting the entire non-solar component from its landfill gas generating facility and about 43 percent of its solar requirement from its own solar facilities.

UNS Electric/Citizens

In 2001, Citizens achieved about 50 percent of the EPS goal of 0.2 percent renewable energy. (Note: UNS Electric purchased landfill gas credits in 2003 that were used to meet the requirement in 2001.)

Navopache Electric

In 2001, Navopache met 50 percent of the EPS goal of 0.2 percent renewable energy through the purchase of landfill gas credits from TEP.

AEPCO and Its Member Cooperatives

AEPCO and its member cooperatives had a waiver until their EPS plan was approved by the Commission. In August 2004, the Commission approved the AEPCO EPS Plan and, in Decision No. 67176, authorized AEPCO to administer the EPS plan on behalf of its member cooperatives.

2001 Environmental Portfolio Standard Results (in kWh)

		-
Arizona Public Service		
Solar Electricity		17,237,202
Solar Hot Water		6,241,328
Solar Air Conditioning		-
Landfill Gas		11,307,931
Biomass		-
Non-Solar kWh Banked	3,692,069	-
Total		**34,786,461**
Total Annual Retail Sales		17,549,259,000
Portfolio Requirement (Sales x .2%)		35,098,518
% of Requirement		**99.11%**
Tucson Electric Power		
Solar Electricity		2,990,538
Solar Hot Water		-
Solar Air Conditioning		-
Landfill Gas		6,884,068
Biomass		-
Wind		-
Manufacturing Credits		25,695
Total		**9,900,301**
Total Annual Retail Sales		6,884,068,333
Portfolio Requirement (Sales x .2%)		13,768,137
% of Requirement		**71.91%**
UNSE/Citizens		
Solar Credits		11,876
Landfill Gas Credits (purchased from TEP in 2003)		1,275,036
Total		**1,286,912**
Total Annual Retail Sales		1,275,036,000
Portfolio Requirement (Sales x .2%)		2,550,072
% of Requirement		**50.47%**
Navopache Electric		
Landfill Gas		150,000
Total		**150,000**
Total Annual Retail Sales		150,000,000
Portfolio Requirement (Sales x .2%)		300,000
% of Requirement		**50.00%**
AEPCO Cooperatives		
AEPCO Cooperatives exempt from compliance in 2001		

B. Arizona's Environmental Portfolio Standard Results - 2002

Arizona Public Service

In 2002, APS achieved over 59 percent of the EPS goal of 0.4 percent renewable energy. One hundred percent of its mandated non-solar goal was met through the purchase of EPS credits from another utility and 20 percent of the solar requirement from its own system installations and the purchase of EPS credits from customer-owned solar systems.

Tucson Electric Power

In 2002, TEP achieved nearly 80 percent of the EPS goal of 0.4 percent renewable energy. This reflects meeting 100 percent of the non-solar component from its landfill gas generating facility and 56 percent of its solar requirement from its own solar facilities.

UNS Electric/Citizens

In 2002, Citizens achieved 51 percent of the EPS goal of 0.4 percent renewable energy. (Note: UNS Electric purchased landfill gas credits in 2003 that were used to meet the requirement in 2002.)

Navopache Electric

In 2002, Navopache met 50 percent of the EPS goal of 0.4 percent renewable energy through the purchase of landfill gas credits from TEP.

AEPCO and Its Member Cooperatives

AEPCO and its Member Cooperatives had a waiver until their EPS plan was approved by the Commission. In August 2004, the Commission, in Decision No. 67176, authorized AEPCO to administer the EPS Plan on behalf of its member cooperatives.

2002 Environmental Portfolio Standard Results (in kWh)		
		-
Arizona Public Service		
Solar Electricity		9,126,664
Solar Hot Water		2,208,334
Solar Air Conditioning		-
Landfill Gas		44,938,574
Biomass		-
Non-Solar kWh Banked	61,426	-
Total		**56,273,572**
Total Annual Retail Sales		23,573,454,000
Portfolio Requirement (Sales x .4%)		94,293,816
% of Requirement		**59.68%**
Tucson Electric Power		
Solar Electricity		9,006,169
Solar Hot Water		-
Solar Air Conditioning		-
Landfill Gas		16,024,836
Biomass		
Wind		5,564
Manufacturing Credits		388,070
Total		**25,424,639**
Total Annual Retail Sales		8,012,417,966
Portfolio Requirement (Sales x .4%)		32,049,672
% of Requirement		**79.33%**
UNSE/Citizens		
Solar Credits		39,000
Landfill Gas Credits (purchased from TEP in 2003)		2,273,162
Total		**2,312,162**
Total Annual Retail Sales		1,136,581,000
Portfolio Requirement (Sales x .4%)		4,546,324
% of Requirement		**50.86%**
Navopache Electric		
Landfill Gas		644,377
Total		**644,377**
Total Annual Retail Sales		322,188,500
Portfolio Requirement (Sales x .4%)		1,288,754
% of Requirement		**50.00%**
AEPCO Cooperatives		
AEPCO Cooperatives exempt from compliance in 2002		

C. Arizona's Environmental Portfolio Standard Results - 2003

Arizona Public Service

In 2003, APS achieved 13.95 percent of the EPS goal of 0.6 percent renewable energy. This was achieved largely through APS' own system installations and the purchase of EPS credits from customer-owned solar systems.

Tucson Electric Power

In 2003, TEP achieved nearly 80 percent of the EPS goal of 0.6 percent renewable energy. This reflects meeting 100 percent of the non-solar component from its landfill gas generating facility and wind credits and 56 percent of its solar requirement from its own solar facilities.

UNS Electric/Citizens

In 2003, UNS Electric achieved 50 percent of the EPS goal of 0.6 percent renewable energy which was achieved largely through the purchase of renewable credits.

Navopache Electric

In 2003, Navopache met about 50 percent of the EPS goal of 0.6 percent renewable energy through the purchase of landfill gas credits from TEP and the purchase of solar resource credits.

AEPCO

AEPCO had a waiver until their EPS plan was approved by the Commission. In August 2004, the Commission, in Decision No. 67176, authorized AEPCO to administer this EPS program on behalf of its member cooperatives.

2003 Environmental Portfolio Standard Results (in kWh)	
	-
Arizona Public Service	
Solar Electricity	14,704,491
Solar Hot Water	2,041,908
Solar Air Conditioning	-
Landfill Gas	33,824
Biomass	-
Banked kWh Used	3,753,495
Customer Programs	30,487
Total	**20,564,205**
Total Annual Retail Sales	24,562,305,000
Portfolio Requirement (Sales x 0.6%)	147,373,830
% of Requirement	**13.95%**
Tucson Electric Power	
Solar Electricity	13,854,056
Solar Hot Water	-
Solar Air Conditioning	-
Landfill Gas	24,688,659
Biomass	-
Wind	5,587
Solar Credits (purchased)	21,065
Manufacturing Credits	240,900
Total	**38,810,267**
Total Annual Retail Sales	8,229,552,740
Portfolio Requirement (Sales x 0.6%)	49,377,316
% of Requirement	**78.60%**
UNSE/Citizens	
Solar Credits	26,700
Landfill Gas Credits (purchased from TEP in 2003)	4,177,398
Total	**4,204,098**
Total Annual Retail Sales	1,392,466,000
Portfolio Requirement (Sales x 0.6%)	8,354,796
% of Requirement	**50.32%**
Navopache Electric	
Solar Electricity	19,674
Landfill Gas	1,014,893
Total	**1,034,567**
Total Annual Retail Sales	344,710,031
Portfolio Requirement (Sales x 0.6%)	2,068,260
% of Requirement	**50.02%**
AEPCO Cooperatives	
AEPCO Cooperatives exempt from compliance in 2003	

D. Arizona's Environmental Portfolio Standard Results - 2004

Arizona Public Service

In 2004, APS achieved 15.9 percent of the EPS goal of 0.8 percent renewable energy. This was achieved largely through APS' own system installations and the purchase of EPS credits from customer-owned solar systems as well as production from a biomass project.

Tucson Electric Power

In 2004, TEP achieved 73 percent of the EPS goal of 0.8 percent renewable energy. This reflects meeting 114 percent of the non-solar component from its landfill gas generating facility and wind credits and 45 percent of its solar requirement from its own solar facilities.

UNS Electric/Citizens

In 2004, UNS Electric achieved 40 percent of the EPS goal of 0.8 percent renewable energy which was achieved largely through the purchase of renewable credits.

Navopache Electric

In 2004, Navopache met about 61.5 percent of the EPS goal of 0.8 percent renewable energy through the purchase of landfill gas credits from TEP and the purchase of solar resource credits.

AEPCO

AEPCO had a waiver until their EPS plan was approved by the Commission. In August 2004, the Commission, in Decision No. 67176, authorized AEPCO to administer the EPS Plan on behalf of its member cooperatives.

2004 Environmental Portfolio Standard Results (in kWh)	
	-
Arizona Public Service	
Solar Electricity	20,117,392
Solar Hot Water	1,527,150
Solar Air Conditioning	-
Landfill Gas	95,063
Biomass	10,337,000
Wind	-
Customer Programs	193,307
Total	**32,269,912**
Total Annual Retail Sales	25,352,988,000
Portfolio Requirement (Sales x 0.8%)	202,823,904
% of Requirement	**15.91%**
Tucson Electric Power	
Solar Electricity	18,582,077
Solar Hot Water	-
Solar Air Conditioning	-
Landfill Gas	31,240,228
Biomass	-
Wind	3,276
Manufacturing Credits	250,869
Total	**50,076,450**
Total Annual Retail Sales	8,542,390,035
Portfolio Requirement (Sales x 0.8%)	68,339,120
% of Requirement	**73.28%**
UNSE/Citizens	
Solar Credits	19,960
Landfill Gas	4,680,000
Total	**4,699,960**
Total Annual Retail Sales	1,462,633,000
Portfolio Requirement (Sales x 0.8%)	11,701,064
% of Requirement	**40.17%**
Navopache Electric	
Solar Electricity	337,605
Landfill Gas	1,462,835
Total	**1,800,440**
Total Annual Retail Sales	365,708,801
Portfolio Requirement (Sales x 0.8%)	2,925,670
% of Requirement	**61.54%**
AEPCO Cooperatives	
AEPCO Cooperatives exempt from compliance until August 2004	